



THOMAS CONVEYOR
COMPANY®

WASTEWATER CAPABILITIES



- Lift Station
- Screening Process
- Grit Chambers
- Distribution Chambers
- Aeration Tanks
- Settling Tanks
- Disinfection
- Digestion Tanks
- Sludge Processing
- Sludge Drying

thomson puts to work our decades of experience to custom design systems to meet your individual needs. Specially engineered features increase the reliability of our machines in your environment.

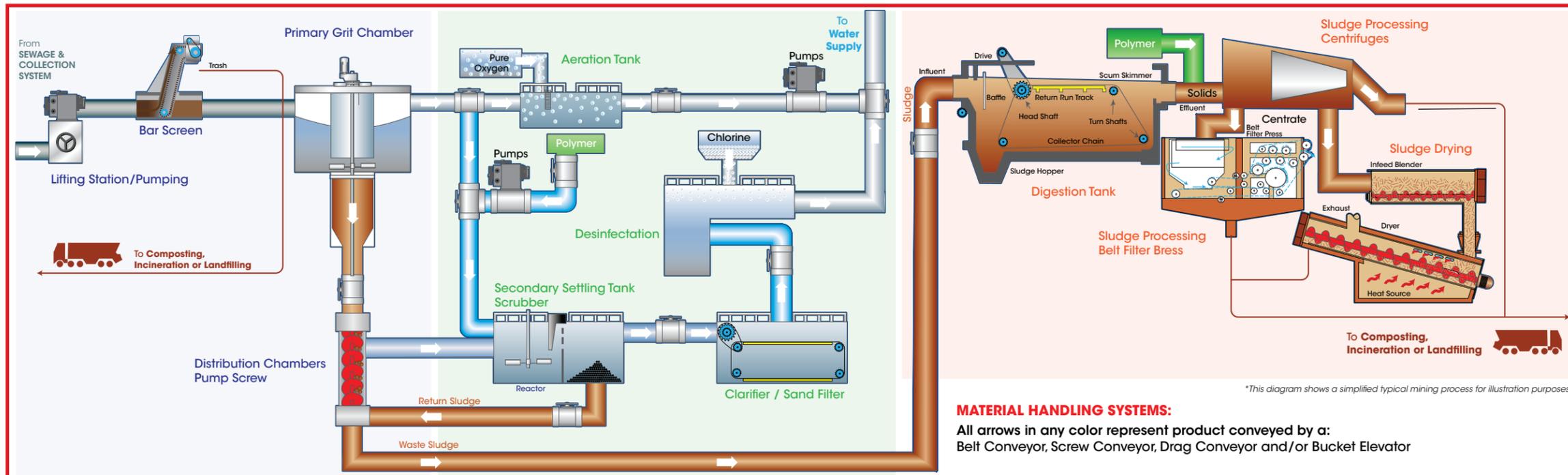
No other company comes close to **thomson**' engineering and design capabilities. We can deliver equipment that has been custom designed if necessary, to fit perfectly your specific application. Through our computer-aided design department and real-life experience, we utilize the latest technology and practical design sense to find effective solutions for your plants.

thomson' sales representatives and engineers utilize their vast experience and expertise to work closely with our clients. They determine those factors of each individual application which have a direct bearing on the conveyor's reliability.

- Correct Size / Appropriate Speed
- Correct Construction Materials
- Maintaining Accurate & Consistent Tolerances in Manufacturing
- Complete Assembly and Testing Before Shipment
- Vast Inventory of Stock Screws & Parts

Since 1953, **thomson** has been the industry leader in providing reliable, quality conveying systems. With more than three hundred employees in four manufacturing facilities, **thomson** is the largest screw manufacturers in North America. But is is the reliability and the long service life of our products that has made us the 'giant' in this industry.

WASTE WATER PLANT FLOW DIAGRAM



MATERIAL HANDLING SYSTEMS:
All arrows in any color represent product conveyed by a:
Belt Conveyor, Screw Conveyor, Drag Conveyor and/or Bucket Elevator

1. PRETREATMENT

Lift Station / Pumping Station

The lift stations bring the raw sewage from underground gravity pipelines into the plant.

Screen Processing

When wastewater first enters the treatment plant, it passes through bar screens, belt screens or spiral screens which remove coarse materials such as rags, bottles, and twigs which could otherwise damage downstream operations and process equipment.

Products used:
Shaftless Screw & Screw Conveyor.

Grit Chamber

The function of a grit chamber is to capture inorganic solids such as dirt and sand that cause wear to pumps and reduce space in process tanks. Lower scrapers along the floor of the basins are used to scrape the settled solids to the grit chamber while the skimmers along the top help slow the flow to a rate where the grit will have time to settle.

Products used:
Shaftless Screw & Screw Conveyor.

Distribution Chamber Pump Screw

This return sludge structure provides sludge pumping, flow rate control to primary oxidation ditch process, and mixing point for raw sewage and return sludge, i.e. Return Activated Sludge.

Products used:
Shaftless Screw & Screw Conveyor.

Waste

Solids are removed and sent to the landfill.

2. TREATMENT (LIQUID)

Aeration Tank

Secondary treatment takes place in the aeration tanks. Large tanks mix the partially treated wastewater with oxygen to support bacteria which devour organic waste. The bacteria levels are managed to provide the most efficient removal process.

Secondary Settling Tank

Oxidation Ditches: provide mixing, oxygen transfer and retention time for microorganisms to convert organics to more stable compounds creating an activated sludge mixed liquid.

Products used:
Shaftless Screw & Screw Conveyor.

Clarifier / Sand Filter

Clarifiers provide detention time for activated sludge to settle and be drawn off gradually and returned to be mixed with incoming raw sewage, known as Return Activated Sludge. The process also removes floatable materials by skimming. The effluent water from the clarifiers then goes to the sand filters for further treatment. The Sand Filters further aid in the removal of suspended particles, floating matter and BOD (Biochemical Oxygen Demand). BOD is a measurement of remaining organics that could cause pollution. The cleanest wastewater is drawn from the top of the aeration tanks through spillways. By this point the water is already quite clear. Polymers may be added to concentrate any remaining material. Once again, suspended particles settle to the bottom and are removed by scrapers or hopper.

Products used:
Shaftless Screw & Screw Conveyor.

Desinfection

Chlorination may be used as a final treatment before the effluent is discharged to a water supply. Chlorine (or other disinfection process) is used to kill any pathogens still remaining in the treated water.

3. TREATMENT (SOLID)

Digestion Tank

Sludge is sent to the digestion tanks where digested substrate is dewatered.

Sludge Processing (Centrifuges and Belt Filter Press)

Sludge is processed to remove any additional water.

Products used:
Shaftless Screw & Screw Conveyor.

Sludge Drying

Many facilities also include a drying station such as an incinerator via screw, drag conveyor or belt filter press. Remaining processed sludge is dried and transported to storage facilities where it can be converted to fertilizer. Drying results in a 4 to 1 reduction in sludge volume.

Products used:
Shaftless Screw & Screw Conveyor.

Waste

Solids are removed and sent to the landfill.



Screening Process



Wastewater Plant



Grit Chamber



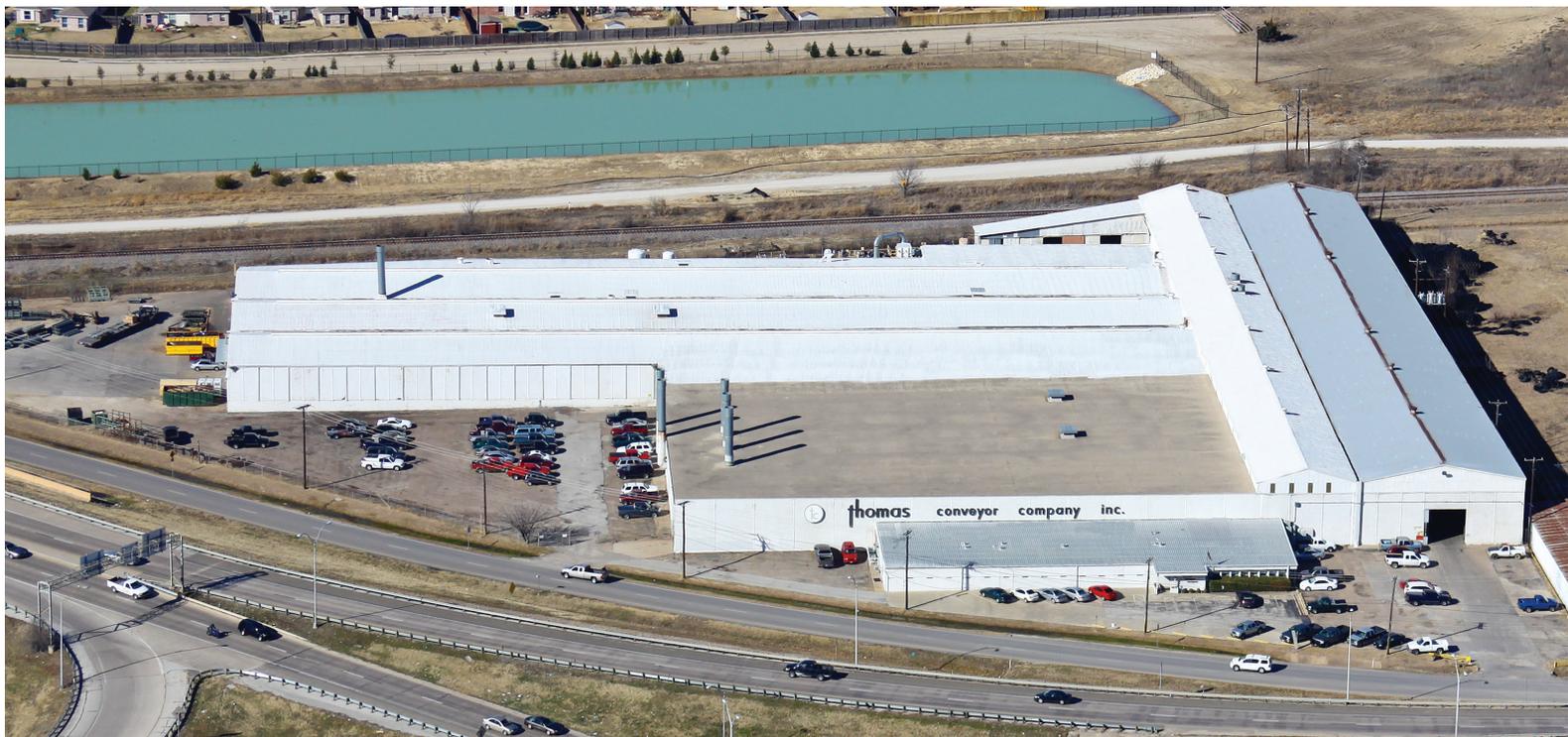
Settling Tank



Specialty Applications

Our extensive industry experience enables us to provide you with the answers to those troublesome areas that impact your ability to get product out the door. Industry specific product guides are available for a number of targeted markets.

- Pulp & Paper
- Rendering
- Wastewater Treatment
- Dust Collection/Air Pollution Control
- Wine & Beverage
- Wood Products
- Food Processing
- Mixer & Shredder
- Aggregate
- Waste-to-Energy
- Chemical & Heavy Industrial
- Cement



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